BEFORE THE PUBLIC UTILITIES COMMISSION
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COMMENTS OF TERRA-GEN, LLC ON THE ADMINISTRATIVE LAW JUDGE'S RULING SEEKING COMMENTS ON PROPOSED PREFERRED SYSTEM PLAN AND TRANSMISSION PLANNING PROCESS PORTFOLIOS

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In accordance with the Rules of Practice and Procedure of the California Public Utilities Commission ("Commission"), Terra-Gen, LLC ("Terra-Gen") hereby submits these comments on the *Administrative Law Judge's Ruling Seeking Comment on Proposed 2023 Preferred System Plan and Transmission Planning Process Portfolios* ("Ruling"), filed on October 5, 2023.

I. INTRODUCTION

Terra-Gen appreciates the opportunity to comment on the proposed Ruling and fully supports the Commission's goal of developing a robust Preferred System Plan ("PSP") that balances the need to generate power that is cost effective while reducing greenhouse gas ("GHG") emissions. Terra-Gen owns and operates over 3.1 Gigawatts ("GWs") of solar, wind, and energy storage capacity in Kern, San Bernadino, Riverside, and San Diego counties and has over 4 GWs in construction and development. Terra-Gen's current and future contributions to California's renewable energy development will help ensure the state meets its ambitious GHG goals.

Terra-Gen's comments are summarized as follows:

- The PSP and underlying busbar mapping of resources ultimately adopted by the Commission should support the expeditious buildout of transmission needed to achieve state policy goals and support system reliability. In particular, the Commission should

support the 2023-24 transmission upgrades recommended in the 2023-24 CAISO Transmission Planning Process despite being modeled for a larger future buildout than modeled in the Ruling.

- The Commission should revise its busbar mapping to include highly viable resources located at the Lakeville substation in the PG&E North of Greater Bay Study Area and to include five known energy storage projects in the busbar mapping effort in the CAISO's Southern California Edison Northern Area transmission planning area. These recommendations will better reflect known development activities and commercial interests in the region that meet Commission criteria for inclusion.

II. RESPONSES TO SPECIFIC ISSUES

3. Proposed Portfolio for CAISO Transmission Planning Process ("TPP")

a. The smaller capacity included in the 2024-25 TPP portfolio should not impact CAISO's justification for building transmission upgrades needed to support the larger 2023-24 TPP portfolio.

The initial PSP draft presented as the foundational scenario for the 2024-25 TPP is approximately 25 GW less than the base portfolio submitted to CAISO for the 2023-24 TPP. This divergence raises potential concerns regarding the approval of essential transmission upgrades identified in the 2023-24 TPP portfolio.

The draft PSP outlines a capacity target of around 38 GW by 2030 and 58 GW by 2035. In contrast, the 2023-24 TPP portfolio used by CAISO to support forthcoming upgrades, encompasses roughly 50 GW by 2030 and 86 GW by 2035. CAISO's TPP schedule includes review of proposed transmission upgrades required to accommodate this larger portfolio on November 16, 2023, and CAISO will be obligated to assess the potential impact of a 2023 PSP that may significantly differ in scale. The Commission should clarify that the 2023 PSP used as

the base case for the 2024-25 TPP should not impact approval of the transmission needed to support the 2023-24 TPP portfolio.

In the decision adopting the 2023-24 TPP portfolio, the Commission stated that CAISO should employ a resource portfolio aligned with elevated load scenarios, necessitating a greater allocation of resources compared to the portfolio adopted as the Preferred System Plan for Load Serving Entities ("LSE") to structure their individual IRPs. This determination aligns with earlier directives from the Commission, the California Energy Commission ("CEC") that urged CAISO to initiate an examination of this heightened load forecast and expanded portfolio size, emphasizing its inclusion as a sensitivity parameter in the 2022-23 TPP cycle.

Terra-Gen concurs with the reasoning underpinning CAISO's decision to utilize the expanded resource portfolio for both the foundational and sensitivity scenarios in the 2022-23 TPP cases. The Commission, CEC, and CAISO have previously recognized that the portfolio surpasses the typical resource portfolios employed in supply resource planning and explicitly articulate their intention that California should depend on this larger portfolio for the specific purpose of transmission planning in the 2023-24 TPP cycle. The Commission should affirm its prior direction to avoid creating uncertainty for the CAISO's 2023-24 TPP cycle. Specifically, this is necessary to prevent undercutting the need for resulting transmission that takes longer to develop and complete and is still needed to enable the timely development of generation and energy storage resources necessary for state policy and reliability goals.

b. Resources must be mapped in Northern California to trigger transmission upgrades that are also essential to achieve development of needed storage resources in the PG&E North of Greater Bay Study area.

In the IRP's busbar mapping process, RESOLVE modeling incorporated upgrade assumptions in the CAISO's transmission whitepaper.[1] Terra-Gen understands that the approach applied for Northern California in the RESOLVE modeling did not trigger major upgrades to solve transmission constraints. Instead, the modeling considered mitigations focused more narrowly on reliability overloads while offering minimal incremental deliverability. The modeling did not allow resources beyond this limited capacity to address longer-term transmission needs. In contrast to the approach applied to Northern California, the methodology applied for modeling in Southern California enables significant incremental deliverability capacity through new backbone transmission lines and new substations to access new resource areas. This apparent inconsistency is concerning for fair and transparent outcomes supporting resource diversity and localized reliability across the entire system.

Given the benefits of resource diversity and geographic diversity, Terra-Gen recommends the IRP staff consider a more comprehensive approach be applied in RESOLVE modeling to identify broader Northern California area needs. CAISO will only identify needed collector substations and backbone transmission lines if a greater number of renewable energy and energy storage resources are located in Northern and Central California in the busbar mapping process. Terra-Gen believes that such an approach will help provide more in-state resources and strengthen transmission system resiliency in Northern California. This approach would also enable significant incremental deliverability needed for the timely development of major energy storage projects located in the PG&E North of Greater Bay Study Area that will not otherwise achieve timely commercial operation.

[1] CAISO, "Transmission Capability Estimates for use in the CPUC's Resource Planning Process" (June 28, 2023), https://www.caiso.com/Documents/White-Paper-2023-Transmission-Capability-Estimates-for-use-in-the-CPUCs-Resrouce-Planning-Process.pdf.

Should IRP staff decline to adjust the artificially limited transmission upgrade options embedded in the RESOLVE model for Northern California, Terra-Gen believes the Commission should request that CAISO draw upon its 20-Year Transmission Outlook to plan 500-kV backbone network upgrades in Northern California that will unlock reliability and policy benefits, including access to needed deliverability to support future development of renewable generation and energy storage resources in the region.

c. Busbar mapping should reflect commercial interest and prior Commission decisions.

The outcomes of IRP busbar mapping influence transmission planning outcomes that play a critical role in the project development process. Terra-Gen requests that the Commission conduct a workshop to present the outcomes of future busbar mapping rounds and seek further input before finalizing the busbar mapping results. This approach is imperative since the Commission's busbar mapping decisions will impose limitations on viable locations for future interconnection applications and impact the future availability of needed deliverability to support otherwise highly viable projects already under development in the queue. Additionally, Terra-Gen provides specific input on projects that should be included in the Commission's busbar mapping to better reflect ongoing development activities, commercial interest, and the impact of prior Commission decisions for emergency resource authorizations.

d. Terra-Gen input on specific busbar mapping issues in the PG&E North of Greater Bay Study Area and SCE Northern Area study areas.

Terra-Gen recommends the Commission’s IRP staff consider the following specific busbar mapping recommendations to support the development of transmission projects that will provide significant deliverability benefits and directly impact project viability.

In the CAISO's planning area for PG&E North of Greater Bay Study Area the preliminary busbar mapping results include only 41 MW of new Full Capacity Deliverability Status (FCDS) 4-hour duration energy storage at the Lakeville 230 kV substation. Terra-Gen recommends reconsidering the busbar mapping approach for this area because there are no viable 41 MW energy storage projects in the queue at the Lakeville substation at any voltage. Terra-Gen also notes that it has one Cluster 14 project, "Borealis Energy Storage", at queue position 1838, comprising 300 MWs of 4-hour duration energy storage, seeking interconnection at the Lakeville 115 kV substation within the PG&E North of Greater Bay Study Area. Terra-Gen's development of the Borealis Energy Storage project is advanced; The project is a Cluster 14 queue position that is currently in the Phase II study process. Further evidencing of the viability of the project includes the fact that the project has been shortlisted under a formal RFP process and Terra-Gen is currently actively negotiating a Power Purchase Agreement ("PPA") with an LSE off-taker for the project. Therefore, Terra-Gen respectfully requests the Borealis Energy Storage project be included in future iterations of busbar mapping at the Lakeville 115kV substation to help support identification of necessary upgrades needed for deliverability.

In the CAISO's planning area for SCE Northern Area the preliminary busbar mapping results only includes 225 MW of new 4-hour duration energy storage resources located at the Springville substation, with no other new resources mapped at the Big Creek, Magunden, or Rector substations.[2] Terra-Gen emphasizes there are at least four other highly viable projects seeking interconnection located at substations in the general vicinity of the SCE Northern Area that have not been selected in the busbar mapping, despite representing significant commercial interest and

[2] Preliminary IRP busbar mapping results, https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2023-irp-cycle-events-and-materials/assumptions-for-the-2024-2025-tpp/dashboard_prelimmapping_10-26-23.xlsx

project viability at the relevant substations noted above. These omitted projects are each included in CAISO Interconnection Cluster 14 and are in the Phase II study process, therefore, they all should be mapped as new resources at their respective substations to help support identification of necessary upgrades needed for deliverability.

Specifically, Terra-Gen notes that it has one Cluster 14 project "Four Creeks Energy Storage", at queue position 2058, comprising 250 MWs of 4-hour duration energy storage, seeking interconnection at the Rector 230 kV substation. Terra-Gen's development of the Four Creeks Energy Storage project is advanced; the project has received its discretionary permits, the project is included in CAISO's Interconnection Cluster 14 and is currently in the Phase II study process. Further evidence of the viability of the project includes the fact that Terra-Gen is also actively seeking a PPA with an LSE off-taker for the project. Therefore, Terra-Gen requests the Four Creeks Energy Storage resource be included in future iterations of busbar mapping. Terra-Gen highlights that all of the currently viable projects located in this area are vital to support reliability in the Big Creek/Ventura local capacity planning area in SCE territory and recommends IRP staff include each in subsequent busbar mapping. The transmission needed to support the timely development of resource in this area will ultimately rely on the results of the IRP busbar mapping efforts.

Terra-Gen also emphasizes the following issues related to the impact of prior Commission emergency resource development authorization that impacts other resource viability that should be reflected in final busbar mapping decisions. Terra-Gen notes the single resource that has included in the preliminary busbar mapping for this general area is a 225 MW 4-hour duration energy storage resource located at the Springville substation. It is apparent that this resource is an SCE project that was approved as a special emergency resource in December of 2021 under the

Commission's Resolution E-5183.[3] The SCE resource was brought on-line without formal interconnection to the CAISO grid through special treatment afforded it by the Commission under Resolution E-5183. Many parties questioned the fairness of this approach that circumvented the interconnection process and has negative impacts on other parties' projects that are already online or in the queue in the proceeding that approved the development of the project.

Regardless of the merits of this emergency resource development approach, the SCE resource at the Springville substation has already been operational as a distribution level asset and is only now able to begin seeking potential deliverability status, but is also the only resource that has been included in this area in the preliminary busbar mapping results. The lack of other resource mapping to busbars in this general area risks unfairly limiting the timely development of viable resources that are also seeking interconnection and deliverability in the area.

Terra-Gen notes that this situation and the extenuating circumstances surrounding the emergency development of this resource warrant special consideration for all impacted resources located in the general vicinity of the Big Creek, Magunden, Springville, and Rector substations that are in Phase II interconnection studies as part of CAISO Interconnection Cluster 14 that should be included specifically in the final busbar mapping at their respective substations. These adjustments to the IRP staff's busbar mapping approach will help to ensure that transmission upgrades needed to address the South of Magunden constraint are identified. Failing to include the additional resources in the busbar mapping for the area will severely limit the potential deliverability of all projects seeking interconnection in the general vicinity and thus also risks delaying needed reliability contributions by highly viable energy storage projects in the Big Creek/Venture local capacity area.

[3] Resolution E-5183, https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M431/K978/431978945.PDF

III. CONCLUSION

Terra-Gen appreciates the opportunity to provide these comments and encourage the Commission's IRP staff to consider the concerns and recommendations as discussed above. Specifically, Terra-Gen requests the Commission to reconsider the mapping of significant volumes of resources in Northern California as highlighted above as a critical aspect requiring attention. Terra-Gen recommends a more comprehensive approach in RESOLVE modeling for Northern California to identify broader needs to address these concerns. Terra-Gen also urges consideration for omitted resources in the PG&E North of Greater Bay Study Area, located within the North Bay local capacity area, and those omitted resources within the SCE Northern Area Study Area, located in the Big Creek/Ventura local capacity area for inclusion in final busbar mapping, particularly for the highly viable projects identified as part of CAISO's Interconnection Cluster 14 Phase II studies.

Addressing these concerns and incorporating the recommended adjustments in the proposed portfolio will contribute to a more robust, transparent, and fair planning process, facilitating the timely development of crucial energy projects and supporting state policy and reliability goals. The Commission's proactive and careful consideration of stakeholder input are key to achieving these objectives.

Respectfully submitted this 13th day of November, 2023, from Sacramento, California.

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